

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A cooling device ~~including~~ comprising:

a cooling unit, ~~capable of cooling~~ configured to cool an object by vaporizing an operating medium with heat from said object, wherein said cooling unit comprises at least a wick through which the operating medium passes and a surface of said at least a wick is coated with a thin film of copper I oxide;

a condensing unit, physically separated from said cooling unit, and ~~capable of condensing~~ configured to condense the vaporized operating medium vaporized in said cooling unit and ~~circulating~~ to circulate the condensed operating medium to said cooling unit;

a first tube, ~~through which~~ configured to guide the condensed operating medium   
 [[flows]] from said condensing unit to said cooling unit; and

a second tube, ~~through which~~ configured to guide the vaporized operating medium   
 [[flows]] from said cooling unit to said condensing unit.

Claim 2 (Currently Amended): The cooling device according to claim 1, wherein said cooling unit ~~includes~~ comprises:

a first substrate, provided with a groove except for a wick;

a second substrate, formed of a metal or a material having a thermal conductivity equivalent to that of a metal, and provided with the at least a wick; and

a third substrate, having a surface incorporating said second substrate, wherein said surface of said third substrate is joined with said first substrate.

Claim 3 (Currently Amended): The cooling device according to claim 2, wherein said second substrate is formed of copper, ~~and wherein a thin film of copper I oxide is formed on the surface of said wick.~~

Claim 4 (Original): The cooling device according to claim 1, wherein at least one of said first tube and said second tube is formed of a fluorocarbon resin.

Claim 5 (Currently Amended): The cooling device according to claim 4, wherein at least one joint of joints between a unit and a tube is coated with a self-bonding fluorocarbon resin, wherein said unit is selected from the group consisting of said cooling unit and said condensing unit, and wherein said tube is selected from the group consisting of said first tube and said second tube.

Claim 6 (Currently Amended): The cooling device according to claim 5, wherein at least one surface of said joint ~~of a~~ between the tube ~~with a~~ and the unit is treated with plasma or reactive ion etching, wherein said tube is selected from the group consisting of said first tube and the second tube, and wherein said unit is selected from the group consisting of said cooling unit and said condensing unit.

Claim 7 (Currently Amended): The cooling device according to claim ~~[[6]]~~ 5, wherein ~~at least one~~ each surface of said joint ~~of a~~ between the tube ~~with a~~ and the unit is treated with plasma or reactive ion etching, wherein said tube is selected from the group consisting of said first tube and the second tube, and wherein said unit is selected from the group consisting of said cooling unit and said condensing unit.

Claim 8 (Original): The cooling device according to claim 1, wherein at least one of the surfaces of said first tube and said second tube has a metal thin film formed thereon.

Claim 9 (Currently Amended): The cooling device according to claim 8, wherein said metal thin film ~~include~~ includes at least one element selected from the group consisting of Cu, Al, Ni, Ti, Au, Pt, Ag, Cr, Fe, Zn, Co, Si, Sn, In and Pb.

Claim 10 (Original): The cooling device according to claim 1, wherein at least one of said first tube and said second tube contains at least one material, selected from the group consisting of silicone rubber, polyurethane, and polypropylene.

Claim 11 (Currently Amended): The cooling device according to claim 10, wherein at least one of [[the]] outer and inner surfaces of said first tube and said second tube is coated with a fluorocarbon resin.

Claim 12 (Currently Amended): An electronic apparatus comprising:  
a central processing unit;  
a cooling unit, disposed adjacent to said central processing unit, and ~~capable of cooling an object~~ configured to cool the central processing unit by vaporizing an operating medium with heat from said ~~object~~ central processing unit, wherein said cooling unit comprises at least a wick through which the operating medium passes and a surface of said at least a wick is coated with a thin film of copper I oxide;

a condensing unit, physically separated from said cooling unit, and ~~capable of condensing~~ configured to condense the vaporized operating medium vaporized in said cooling unit and ~~circulating to~~ circulate the condensed operating medium to said cooling unit;

a first tube, ~~through which~~ configured to guide the condensed operating medium  
[[flows]] from said condensing unit to said cooling unit; and

a second tube, ~~through which~~ configured to guide the vaporized operating medium  
[[flows]] from said cooling unit to said condensing unit.

Claim 13 (Currently Amended): The electronic apparatus according to claim 12,  
wherein said cooling unit has an area that is substantially equal to [[the]] an area of said  
central processing unit.

Claim 14 (Currently Amended): An electronic apparatus, having a slot through which  
a card memory device comprising a flash memory and a driver is capable of being inserted  
therein or removed therefrom, said electronic apparatus comprising:

a cooling unit, being disposed adjacent to said slot, and ~~being capable of cooling~~  
configured to cool an object by vaporizing an operating medium with heat from said object,  
wherein said cooling unit comprises at least a wick through which the operating medium  
passes and a surface of said at least a wick is coated with a thin film of copper I oxide;

a condensing unit, being physically separated from said cooling unit, and ~~being~~  
~~capable of condensing~~ configured to condense the vaporized operating medium vaporized in  
said cooling unit and ~~circulating~~ to circulate the condensed operating medium to said cooling  
unit;

a first tube, ~~through which~~ configured to guide the condensed operating medium  
[[flows]] from said condensing unit to said cooling unit; and

a second tube, ~~through which~~ configured to guide the vaporized operating medium  
[[flows]] from said cooling unit to said condensing unit.

Claim 15 (Currently Amended): An electronic apparatus, ~~including~~ comprising:  
an operating unit having at least a central processing unit;  
a cooling unit, being disposed adjacent to said central processing unit, and ~~being~~  
~~capable of cooling an object~~ configured to cool said central processing unit by vaporizing an  
operating medium with heat from said ~~object~~ central processing unit, wherein said cooling  
unit comprises at least a wick through which the operating medium passes and a surface of  
said at least a wick is coated with a thin film of copper I oxide;  
a display unit, being physically separated from said cooling unit, and having a  
condensing unit that is ~~capable of condensing~~ configured to condense the vaporized operating  
medium vaporized in said cooling unit;  
a coupling unit, ~~being capable of~~ configured to collapsibly ~~coupling~~ couple a side of  
said operating unit and a side of said display unit;  
a first tube disposed between said condensing unit and said cooling unit by said  
coupling unit, wherein the condensed operating medium flows from said condensing unit to  
said cooling unit through said first tube; and  
a second tube disposed between said condensing unit and said cooling unit by said  
coupling unit, wherein the vaporized operating medium flows from said cooling unit to said  
condensing unit through said second tube.

Claim 16 (Currently Amended): An acoustic apparatus, having a power transistor,  
comprising:

a cooling unit, ~~being capable of cooling~~ configured to cool said power transistor by  
vaporizing an operating medium with heat from said ~~object~~ power transistor, wherein said  
cooling unit comprises at least a wick through which the operating medium passes and a  
surface of said at least a wick is coated with a thin film of copper I oxide;

a condensing unit, being physically separated from said cooling unit, and ~~being~~  
~~capable of condensing~~ configured to condense the vaporized operating medium vaporized in  
said cooling unit and ~~circulating to circulate~~ the condensed operating medium to said cooling  
unit;

a first tube, ~~through which~~ configured to guide the condensed operating medium  
[[flows]] from said condensing unit to said cooling unit; and

a second tube, ~~through which~~ configured to guide the vaporized operating medium  
[[flows]] from said cooling unit to said condensing unit.

Claim 17 (Currently Amended): A method for producing a cooling device,  
comprising:

producing a cooling unit, which is capable of cooling an object by vaporizing an  
operating medium with heat from said object;

producing at least a wick surface in said cooling unit through which the operating  
medium passes and coating a surface of said at least a wick with a thin film of copper I oxide;

producing a condensing unit, which is physically separated from said cooling unit,  
and is capable of condensing the vaporized operating medium vaporized in said cooling unit  
and circulating the condensed operating medium to said cooling unit;

coupling a first tube between said cooling unit and said condensing unit, wherein the  
condensed operating medium is capable of flowing from said condensing unit to said cooling  
unit through said first tube; and

coupling a second tube between said cooling unit and said condensing unit, wherein  
the vaporized operating medium is capable of flowing from said cooling unit to said  
condensing unit through said second tube.

Claim 18 (Cancelled).

Claim 19 (Original): The method according to claim 17, wherein at least one of said first tube and said second tube is formed of a fluorocarbon resin.

Claim 20 (Currently Amended): The method according to claim 19, further comprising:

forming a coating of self-bonding fluorocarbon resin onto at least one joint of joints between a unit and a tube, wherein said unit is selected from the group consisting of said cooling unit and said condensing unit, and wherein said tube is selected from the group consisting of said first tube and said second tube.

Claim 21 (Currently Amended): The method according to claim 19, further comprising:

treating a surface of said fluorocarbon resin ~~surface~~ with hydrogen plasma.

Claim 22 (Currently Amended): The method according to claim 17, further comprising:

forming a metal thin film on at least one surface of ~~[[the]]~~ surfaces of said first tube and said second tube.

Claim 23 (Currently Amended): The method according to claim 22, wherein said metal thin film includes at least one element selected from the group consisting of Cu, Al, Ni, Ti, Au, Pt, Ag, Cr, Fe, Zn, Co, Si, Sn, In and Pb.

Claim 24 (Original): The method according to claim 17, wherein at least one of said first tube and said second tube contains at least one material selected from the group consisting of silicone rubber, polyurethane, and polypropylene.

Claim 25 (Currently Amended): The method according to claim 24, further comprising:

forming a coating of fluorocarbon resin onto at least one of [[the]] outer and inner surfaces of said first tube and said second tube.

Claim 26 (New): A cooling device comprising:

a cooling unit configured to cool an object by vaporizing an operating medium with heat from said object;

a condensing unit, physically separated from said cooling unit, and configured to condense the vaporized operating medium vaporized in said cooling unit and to circulate the condensed operating medium to said cooling unit;

a first tube configured to guide the condensed operating medium from said condensing unit to said cooling unit; and

a second tube configured to guide the vaporized operating medium from said cooling unit to said condensing unit,

wherein said cooling unit comprises:

a first substrate, provided with a groove except for a wick,

a second substrate, formed of a metal or a material having a thermal conductivity equivalent to that of a metal, and provided with at least a wick, and

a third substrate, having a surface incorporating said second substrate, wherein said surface of said third substrate is joined with said first substrate,



wherein said second substrate is formed of copper, and

wherein a thin film of copper I oxide is formed on a surface of said at least a wick.

Claim 27 (New): A method for producing a cooling device, comprising:

producing a cooling unit, which is capable of cooling an object by vaporizing an operating medium with heat from said object;

producing a condensing unit, which is physically separated from said cooling unit, and is capable of condensing the vaporized operating medium vaporized in said cooling unit and circulating the condensed operating medium to said cooling unit;

coupling a first tube between said cooling unit and said condensing unit, wherein the condensed operating medium is capable of flowing from said condensing unit to said cooling unit through said first tube;

coupling a second tube between said cooling unit and said condensing unit, wherein the vaporized operating medium is capable of flowing from said cooling unit to said condensing unit through said second tube; and

forming a thin film of copper I oxide on a wick surface that is provided on said cooling unit.